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Amendments to the Claims

1-35. (cancelled)

36. (currently amended) A rotary spindle assembly comprising a rotary drive motor, a rotary spindle, a wafer support, a wafer processing bowl, a heat regulating flange, and a heat regulating element, wherein:

said wafer support is secured to said rotary spindle so as to be rotatable with said spindle;

~~said wafer processing bowl defines an exhaust gas flow profile extending along said rotary spindle past said wafer support;~~

said rotary spindle defines a lower heat regulation zone spindle area and an upper heat regulation zone spindle area;

said rotary spindle is mechanically coupled to said rotary drive motor in said lower heat regulation zone spindle area;

said heat regulating flange is positioned in said lower heat regulation zone spindle area;

said heat regulating element is positioned in said upper heat regulation zone spindle area;

said heat regulating element comprises a fluid conduit defining a substantially cylindrical heat regulation void about a portion of said rotary spindle in said upper heat regulation zone spindle area;

said heat regulating element defines an open framework arranged about said rotary spindle such that upper and lower ends bounds of said heat regulating element are open to said substantially cylindrical heat regulation void ~~along a cylindrical projection extending from said lower heat regulation zone spindle area to said upper heat regulation zone spindle area~~; and

dimensions of said cylindrical heat regulation void defined by said heat regulating element are established so as to ~~avoid substantial degradation of said exhaust gas flow profile defined by said wafer processing bowl and~~ permit flow of exhaust gases along

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~~said exhaust gas flow profile defined by said wafer processing bowl~~ from said lower heat regulation zone spindle area beyond said lower end bound of said heat regulating element through said upper ~~heat regulation zone spindle area~~ beyond said upper end bound of said heat regulating element.

37. (previously presented) A rotary spindle assembly as claimed in claim 36 wherein said substantially cylindrical heat regulation void defined by said fluid conduit is defined along a limited extent of said rotary spindle, displaced a substantial distance from said heat regulating flange.

38. (previously presented) A rotary spindle assembly as claimed in claim 37 wherein said distance by which said substantially cylindrical heat regulation void is displaced from said heat regulating flange comprises a major portion of a length of said rotary spindle defined between said wafer support and said heat regulating flange.

39. (previously presented) A rotary spindle assembly as claimed in claim 36 wherein said heat regulating flange further comprises a temperature sensor positioned within said flange body proximate said rotary spindle passage.

40. (previously presented) A rotary spindle assembly as claimed in claim 39 wherein said rotary spindle assembly further comprises:

at least one liquid source coupled to said fluid conduit; and

a controller coupled to said at least one liquid source and said temperature sensor, said controller being programmed to be responsive to a temperature signal generated by said temperature sensor.

41. (previously presented) A rotary spindle assembly as claimed in claim 39 wherein said temperature sensor is positioned within a bore defined within said flange body;

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42. (previously presented) A rotary spindle assembly as claimed in claim 41 wherein said bore extends from an outer periphery of said flange body to an inner periphery of said flange body proximate a rotary spindle passage defined in said flange body.

43. (currently amended) A rotary spindle assembly comprising a rotary drive motor, a rotary spindle, a wafer support, a wafer processing bowl, a heat regulating flange, and a heat regulating element, wherein:

said wafer support is secured to said rotary spindle so as to be rotatable with said spindle;

~~said wafer processing bowl defines an exhaust gas flow profile extending along said rotary spindle from said lower heat regulation zone, through said upper heat regulation zone, and past said wafer support;~~

said rotary spindle defines upper and lower heat regulation zone spindle areas;

said rotary spindle is mechanically coupled to said rotary drive motor in said lower heat regulation zone spindle area;

said heat regulating flange is positioned in said lower heat regulation zone spindle area;

said heat regulating element is positioned in said upper heat regulation zone spindle area;


said heat regulating element comprises a fluid conduit defining a substantially cylindrical heat regulation void about a portion of said rotary spindle in said upper heat regulation zone spindle area;

dimensions of said cylindrical heat regulation void defined by said heat regulating element are established so as to ~~avoid substantial degradation of said exhaust gas flow profile defined by said wafer processing bowl~~ and permit flow of exhaust gases along ~~said exhaust gas flow profile defined by said wafer processing bowl~~ from said lower heat regulation zone spindle area beyond said lower end bound of said heat regulating element through said upper heat regulation zone spindle area beyond said upper end bound of said heat regulating element; and

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said substantially cylindrical heat regulation void defined by said fluid conduit is defined along a limited extent of said rotary spindle, displaced a substantial distance from said heat regulating flange; and

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said distance by which said substantially cylindrical heat regulation void is displaced from said heat regulating flange comprises a major portion of a length of said rotary spindle defined between said wafer support and said heat regulating flange.



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Amendments to the Drawings

Attached hereto is replacement sheet 1/3. Reference number 22 has been added to Fig. 2. Previous additions to Fig. 2 are hereby deleted. No new matter has been entered.

attachment: annotated replacement sheet